AMENDMENTS TO THE CLAIMS

1-5. (Canceled)

6. (Currently amended) A method for duplicating a diffraction grating used in an optical head device leading light from a light source to an optical system, converging the light on an optical recording medium through a converging lens, detecting reflected light from the optical recording medium by a photodetector and recording information to the optical recording medium, reproducing information therefrom, or performing both the recording and reproducing, said diffraction grating comprising a grating part which comprises a plurality of divided areas, comprising the steps of:

forming a setting such that diffracted light exiting from each of the plurality of areas is led to a corresponding particular photo-detecting area of the photodetector;

forming each of the plurality of areas of the diffraction grating either by first two-beam interference exposure in which a hologram recording material is exposed to interference fringes produced from first divergent light emitted from a position equivalent to a light emitting point on the light source of the optical head device and second divergent light emitted from a position equivalent to a light receiving point corresponding to each photo-detecting area on the photodetector, or by second two-beam interference exposure in which a hologram recording material is exposed to interference fringes produced from first convergent light converging at the position equivalent to the light emitting point on the light source of the optical head device and second convergent light converging at the point equivalent to the light receiving point corresponding to each photo-detecting area;

utilizing the diffraction grating ~~claimed in claim 1, comprising the grating part~~ which is divided into the plurality of areas[[,]] as an original hologram plate, and making the original hologram plate and a hologram recording material for duplication approximately in contact with one another; and

applying light from the side of the original hologram plate, so as to expose the hologram recording material to interference fringes produced by 0-th light and 1-st diffracted light generated from the original hologram plate.

7. (Currently amended) A method for duplicating a diffraction grating used in an optical head device leading light from a light source to an optical system, converging the light on an optical recording medium through a converging lens, detecting reflected light from the optical recording medium by a photodetector and recording information to the optical recording medium, reproducing information therefrom, or performing both the recording and reproducing, said diffraction grating comprising a grating part which comprises a plurality of divided areas, comprising the steps of:

forming a setting such that diffracted light exiting from each of the plurality of areas is led to a corresponding particular photo-detecting area of the photodetector;

forming each of the plurality of areas of the diffraction grating either by first two-beam interference exposure in which a hologram recording material is exposed to interference fringes produced from first divergent light emitted from a position equivalent to a light emitting point on the light source of the optical head device and second divergent light emitted from a position equivalent to a light receiving point corresponding to each photo-detecting area on the photodetector, or by second two-beam interference exposure in which a hologram recording material is exposed to interference fringes produced from first convergent light converging at the position equivalent to the light emitting point on the light source of the optical head device and second convergent light converging at the point equivalent to the light receiving point corresponding to each photo-detecting area;

configuring athe diffraction grating based on calculation made through a computer, ~~for interference fringes equivalent to that of said~~ the diffraction grating ~~claimed in claim 1 which comprises~~ comprising the grating part divided into the plurality of areas, for utilizing it as an original hologram plate, and making the original hologram plate and a hologram recording material for duplication approximately in contact with one another; and

applying light from the side of the original hologram plate, so as to expose the hologram recording material to interference fringes produced by 0-th light and 1-st diffracted light generated from the original hologram plate.

8. (Previously Presented) The method for duplicating a diffraction grating as claimed in claim 6, wherein:

convergent light converging at the position equivalent to the emitting point on the light source of the optical head device or divergent light emitted from the position equivalent to the light emitting point on the light source of the optical head device is used as light to be applied when the original hologram plate of the diffraction grating is made approximately in contact with the hologram recording material for duplication and the light is applied from the side of the original hologram plate so that the diffraction grating is duplicated.

9. (Previously Presented) The method for duplicating a diffraction grating as claimed in claim 7, wherein:

convergent light converging at the position equivalent to the emitting point on the light source of the optical head device or divergent light emitted from the position equivalent to the light emitting point on the light source of the optical head device is used as light to be applied when the original hologram plate of the diffraction grating is made approximately in contact with the hologram recording material for duplication and the light is applied from the side of the original hologram plate so that the diffraction grating is duplicated.

10. (Previously Presented) The method for duplicating a diffraction grating as claimed in claim 6, wherein:

convergent light converging at a position, corresponding to the light emitting point of the light source, determined according to a difference between the duplicating wavelength

and the light source wavelength of the optical head device or divergent light emitted from a position, corresponding to the light emitting point of the light source, determined according to the difference between the duplicating wavelength and the light source wavelength of the optical head device is used as light to be applied when the original hologram plate of the diffraction grating is made approximately in contact with the hologram recording material for duplication and the light is applied from the side of the original hologram plate so that the diffraction grating is duplicated,

11. (Previously Presented) The method for duplicating a diffraction grating as claimed in claim 7, wherein:

convergent light converging at a position, corresponding to the light emitting point of the light source, determined according to a difference between the duplicating wavelength and the light source wavelength of the optical head device or divergent light emitted from a position, corresponding to the light emitting point of the light source, according to the difference between the duplicating wavelength and the light source wavelength of the optical head device is used as light to be applied when the original hologram plate of the diffraction grating is made approximately in contact with the hologram recording material for duplication and the light is applied from the side of the original hologram plate so that the diffraction grating is duplicated,

12. (Previously Presented) The method for duplicating a diffraction grating as claimed in claim 6, wherein:

convergent light converging at a position equivalent to a point from among a plurality of light receiving points respectively corresponding to a plurality of photo-detecting areas of the photodetector of the optical head device or divergent light emitted from a position equivalent to a point from among the plurality of light receiving points respectively corresponding to the plurality of photo-detecting areas is used as light to be applied when the

original hologram plate of the diffraction grating is made approximately in contact with the hologram recording material for duplication and the light is applied from the side of the original hologram plate so that the diffraction grating is duplicated.

13. (Previously Presented) The method for duplicating a diffraction grating as claimed in claim 7, wherein:

convergent light converging at a position equivalent to a point from among a plurality of light receiving points respectively corresponding to a plurality of photo-detecting areas of the photodetector of the optical head device or divergent light emitted from a position equivalent to a point from among the plurality of light receiving points respectively corresponding to the plurality of photo-detecting areas is used as light to be applied when the original hologram plate of the diffraction grating is made approximately in contact with the hologram recording material for duplication and the light is applied from the side of the original hologram plate so that the diffraction grating is duplicated.

14. (Previously Presented) The method for duplicating a diffraction grating as claimed in claim 6, wherein:

convergent light converging at a position, corresponding to a point from among a plurality of light receiving points respectively corresponding to a plurality of photo-detecting areas of the photodetector of the optical head device, determined according to a difference between the duplicating wavelength and the light source wavelength of the optical head device, or divergent light emitted from a position, corresponding to a point from among the plurality of light receiving points respectively corresponding to the plurality of photo-detecting areas of the photodetector of the optical head device, determined according to the difference between the duplicating wavelength and the light source wavelength of the optical head device is used as light to be applied when the original hologram plate of the diffraction grating is made approximately in contact with the hologram recording material for

duplication and the light is applied from the side of the original hologram plate so that the diffraction grating is duplicated.

15. (Previously Presented) The method for duplicating a diffraction grating as claimed in claim 7, wherein:

convergent light converging at a position, corresponding to a point from among a plurality of light receiving points respectively corresponding to a plurality of photo-detecting areas of the photodetector of the optical head device, determined according to a difference between the duplicating wavelength and the light source wavelength of the optical head device, or divergent light emitted from a position, corresponding to a point from among the plurality of light receiving points respectively corresponding to the plurality of photo-detecting areas of the photodetector of the optical head device, determined according to the difference between the duplicating wavelength and the light source wavelength of the optical head device is used as light to be applied when the original hologram plate of the diffraction grating is made approximately in contact with the hologram recording material for duplication and the light is applied from the side of the original hologram plate so that the diffraction grating is duplicated.

16. (Previously Presented) The method for duplicating a diffraction grating as claimed in claim 12, wherein:

as the light to be applied for the duplication, convergent light converging at or divergent light diverging from a position corresponding to a light receiving point of a photo-detecting area from among the plurality of photo-detecting areas provided for obtaining a focus error signal is used.

17. (Previously Presented) The method for duplicating a diffraction grating as claimed in claim 13, wherein:

as the light to be applied for the duplication, convergent light converging at or divergent light diverging from a position corresponding to a light receiving point of a photo-detecting area from among the plurality of photo-detecting areas provided for obtaining a focus error signal is used.

18. (Previously Presented) The method for duplicating a diffraction grating as claimed in claim 14, wherein:

as the light to be applied for the duplication, convergent light converging at or divergent light diverging from a position corresponding to a light receiving point of a photo-detecting area from among the plurality of photo-detecting areas provided for obtaining a focus error signal is used.

19. (Previously Presented) The method for duplicating a diffraction grating as claimed in claim 15, wherein:

as the light to be applied for the duplication, convergent light converging at or divergent light diverging from a position corresponding to a light receiving point of a photo-detecting area from among the plurality of photo-detecting areas provided for obtaining a focus error signal is used.

20. (Currently amended) A method for duplicating the diffraction grating used in an optical head device leading light from a light source to an optical system, converging the light on an optical recording medium through a converging lens, detecting reflected light from the optical recording medium by a photodetector and recording information to the optical recording medium, reproducing information therefrom, or performing both the recording and reproducing, said diffraction grating

comprising a grating part which comprises a plurality of divided areas ~~claimed in claim 1~~, comprising the steps of:

forming a setting such that diffracted light exiting from each of the plurality of areas is led to a corresponding particular photo-detecting area of the photodetector;

forming each of the plurality of areas of the diffraction grating either by first two-beam interference exposure in which a hologram recording material is exposed to interference fringes produced from first divergent light emitted from a position equivalent to a light emitting point on the light source of the optical head device and second divergent light emitted from a position equivalent to a light receiving point corresponding to each photo-detecting area on the photodetector, or by second two-beam interference exposure in which a hologram recording material is exposed to interference fringes produced from first convergent light converging at the position equivalent to the light emitting point on the light source of the optical head device and second convergent light converging at the point equivalent to the light receiving point corresponding to each photo-detecting area;

configuring ~~a~~the diffraction grating based on calculation made through a computer for interference fringes equivalent to that of the diffraction grating ~~claimed in claim 1~~ which comprises the grating part divided into the plurality of areas, for utilizing it as a first original hologram plate, and making the original hologram plate and a hologram recording material for duplication approximately in contact with one another;

applying light from the side of the original hologram plate, so as to expose the hologram recording material to the interference fringes produced by 0-th light and 1-st diffracted light generated from the first original hologram plate so as to produced a second original hologram plate;

making the second original hologram plate and a hologram recording material for duplication approximately in contact with one another; and

applying light from the side of the second original hologram plate, so as to expose the hologram recording material to the interference fringes produced by 0-th light and 1-st

diffracted light generated from the first original hologram plate so as to produce a diffraction grating,

wherein, when the diffraction grating is produced as a result of the second original hologram plate being and the hologram recording material for duplication being made approximately in contact with one another and the light being applied from the side of the second original hologram plate, convergent light converging at a position equivalent to a light emitting point of the light source of the optical head device or divergent light emitted from the position equivalent to the light emitting point of the light source is used as the light to be applied.

21. (Currently amended) A method for duplicating the diffraction grating used in an optical head device leading light from a light source to an optical system, converging the light on an optical recording medium through a converging lens, detecting reflected light from the optical recording medium by a photodetector and recording information to the optical recording medium, reproducing information therefrom, or performing both the recording and reproducing, said diffraction grating comprising a grating part which comprises a plurality of divided areas~~claimed in claim 1~~, comprising the steps of:

forming a setting such that diffracted light exiting from each of the plurality of areas is led to a corresponding particular photo-detecting area of the photodetector;

forming each of the plurality of areas of the diffraction grating either by first two-beam interference exposure in which a hologram recording material is exposed to interference fringes produced from first divergent light emitted from a position equivalent to a light emitting point on the light source of the optical head device and second divergent light emitted from a position equivalent to a light receiving point corresponding to each photo-detecting area on the photodetector, or by second two-beam interference exposure in which a hologram recording material is exposed to interference fringes produced from first convergent light converging at the position equivalent to the light emitting point on the light

source of the optical head device and second convergent light converging at the point equivalent to the light receiving point corresponding to each photo-detecting area;

configuring ~~a~~the diffraction grating based on calculation made through a computer for interference fringes equivalent to that of the diffraction grating ~~claimed in claim 1~~ which comprises the grating part divided into the plurality of areas, for utilizing it as a first original hologram plate, and making the first original hologram plate and a hologram recording material for duplication approximately in contact with one another;

applying light from the side of the first original hologram plate, so as to expose the hologram recording material to the interference fringes produced by 0-th light and 1-st diffracted light generated from the first original hologram plate so as to produce a second original hologram plate;

making the second original hologram plate and a hologram recording material for duplication approximately in contact with one another; and

applying light from the side of the second original hologram plate, so as to expose the hologram recording material to the interference fringes produced by 0-th light and 1-st diffracted light generated from the second original hologram plate so as to produce a diffraction grating,

wherein, in case where the duplicating exposure wavelength is different from the light source wavelength, when the diffraction grating is produced as a result of the second original hologram plate and the hologram recording material for duplication being made approximately in contact with one another and the light being applied from the side of the second original hologram plate, convergent light converging at a position, corresponding to the light emitting point of the light source of the optical head device, determined according to a difference between the duplicating exposure wavelength and the light source wavelength of the optical head device, or divergent light emitted from a position, corresponding to the light emitting point of the light source of the optical head device,

determined according to the difference between the duplicating exposure wavelength and the light source wavelength of the optical head device is used as the light to be applied.

22. (Currently amended) A method for duplicating the diffraction grating used in an optical head device leading light from a light source to an optical system, converging the light on an optical recording medium through a converging lens, detecting reflected light from the optical recording medium by a photodetector and recording information to the optical recording medium, reproducing information therefrom, or performing both the recording and reproducing, said diffraction grating comprising a grating part which comprises a plurality of divided areas~~claimed in claim 1~~, comprising the step of:

forming a setting such that diffracted light exiting from each of the plurality of areas is led to a corresponding particular photo-detecting area of the photodetector;

forming each of the plurality of areas of the diffraction grating either by first two-beam interference exposure in which a hologram recording material is exposed to interference fringes produced from first divergent light emitted from a position equivalent to a light emitting point on the light source of the optical head device and second divergent light emitted from a position equivalent to a light receiving point corresponding to each photo-detecting area on the photodetector, or by second two-beam interference exposure in which a hologram recording material is exposed to interference fringes produced from first convergent light converging at the position equivalent to the light emitting point on the light source of the optical head device and second convergent light converging at the point equivalent to the light receiving point corresponding to each photo-detecting area;

configuring ~~a~~the diffraction grating based on calculation made through a computer for interference fringes equivalent to that of said diffraction grating ~~claimed in claim 1~~ which comprises the grating part divided into the plurality of areas, for utilizing it as a first original hologram plate, and making the first original hologram plate and a hologram recording material for duplication approximately in contact with one another;

applying light from the side of the original hologram plate, so as to expose the hologram recording material to the interference fringes produced by 0-th light and 1-st diffracted light generated from the first original hologram plate so as to produce a second original hologram plate;

making the second original hologram plate and a hologram recording material for duplication approximately in contact with one another; and

applying light from the side of the second original hologram plate, so as to expose the hologram recording material to the interference fringes produced by 0-th light and 1-st diffracted light generated from the first original hologram plate so as to produce a diffraction grating,

wherein, when the diffraction grating is produced as a result of the second original hologram plate and the hologram recording material for duplication being made approximately in contact with one another and the light being applied from the side of the second original hologram plate, convergent light converging at a position equivalent to a point from among a plurality of light receiving points corresponding to a plurality of photo-detecting areas of the photodetector of the optical head device or divergent light emitted from a position equivalent to a point from among the plurality of light receiving points is used as the light to be applied.

23. (Currently amended) A method for duplicating the diffraction grating used in an optical head device leading light from a light source to an optical system, converging the light on an optical recording medium through a converging lens, detecting reflected light from the optical recording medium by a photodetector and recording information to the optical recording medium, reproducing information therefrom, or performing both the recording and reproducing, said diffraction grating comprising a grating part which comprises a plurality of divided areas~~claimed in claim 1~~, comprising the step of:

forming a setting such that diffracted light exiting from each of the plurality of areas is led to a corresponding particular photo-detecting area of the photodetector;

forming each of the plurality of areas of the diffraction grating either by first two-beam interference exposure in which a hologram recording material is exposed to interference fringes produced from first divergent light emitted from a position equivalent to a light emitting point on the light source of the optical head device and second divergent light emitted from a position equivalent to a light receiving point corresponding to each photo-detecting area on the photodetector, or by second two-beam interference exposure in which a hologram recording material is exposed to interference fringes produced from first convergent light converging at the position equivalent to the light emitting point on the light source of the optical head device and second convergent light converging at the point equivalent to the light receiving point corresponding to each photo-detecting area;

configuring ~~a~~the diffraction grating based on calculation made through a computer for interference fringes equivalent to that of said diffraction grating ~~claimed in claim 1~~ which comprises the grating part divided into the plurality of areas, for utilizing it as a first original hologram plate, and making the original hologram plate and a hologram recording material for duplication approximately in contact with one another;

applying light from the side of the original hologram plate, so as to expose the hologram recording material to the interference fringes produced by 0-th light and 1-st diffracted light generated from the first original hologram plate so as to produce a second original hologram plate;

making the second original hologram plate and a hologram recording material for duplication approximately in contact with one another; and

applying light from the side of the second original hologram plate, so as to expose the hologram recording material to the interference fringes produced by 0-th light and 1-st diffracted light generated from the second original hologram plate so as to produce a diffraction grating,

wherein, in case where the duplicating exposure wavelength is different from the light source wavelength of the optical head device, when the diffraction grating is produced as a result of the second original hologram plate and the hologram recording material for duplication being made approximately in contact with one another and the light being applied from the side of the second original hologram plate, convergent light converging at a position corresponding to a point from among a plurality of light receiving points corresponding to a plurality of photo-detecting areas of the photodetector of the optical head device determined according to a difference between the duplicating exposure wavelength and the light source wavelength of the optical head device, or divergent light emitted from a position corresponding to a point from among the plurality of light receiving points corresponding to the plurality of photo-detecting areas of the photodetector of the optical head device according to the difference between the duplicating exposure wavelength and the light source wavelength of the optical head device is used as the light to be applied.

24. (Previously Presented) The method for duplicating a diffraction grating claimed in claim 6, wherein:

when the duplicating exposure wavelength is different from the light source wavelength of the optical head device, the duplicating exposure is performed with the use of an optical system for applying the light from the side of the original hologram plate configured so that said optical system provides aberration for canceling out aberration otherwise occurring due to difference in light wavelength between the duplicating operation and the reproduction operation in the optical head device.

25. (Previously Presented) The method for duplicating a diffraction grating claimed in claim 7, wherein:

when the duplicating exposure wavelength is different from the light source wavelength of the optical head device, the duplicating exposure is performed with the use of

an optical system for applying the light from the side of the original hologram plate configured so that said optical system provides aberration for canceling out aberration otherwise occurring due to difference in light wavelength between the duplicating operation and the reproduction operation in the optical head device.

26. (Currently amended) A method for duplicating a diffraction grating used in an optical head device leading light from a light source to an optical system, converging the light on an optical recording medium through a converging lens, detecting reflected light from the optical recording medium by a photodetector and recording information to the optical recording medium, reproducing information therefrom, or performing both the recording and reproducing, said diffraction grating comprising a grating part which comprises a plurality of divided areas, comprising the step of:

forming a setting such that diffracted light exiting from each of the plurality of areas is led to a corresponding particular photo-detecting area of the photodetector;

forming each of the plurality of areas of the diffraction grating either by first two-beam interference exposure in which a hologram recording material is exposed to interference fringes produced from first divergent light emitted from a position equivalent to a light emitting point on the light source of the optical head device and second divergent light emitted from a position equivalent to a light receiving point corresponding to each photo-detecting area on the photodetector, or by second two-beam interference exposure in which a hologram recording material is exposed to interference fringes produced from first convergent light converging at the position equivalent to the light emitting point on the light source of the optical head device and second convergent light converging at the point equivalent to the light receiving point corresponding to each photo-detecting area; and

using, as an original hologram plate, the diffraction grating, ~~according to claim 1~~ or a diffraction grating produced based on calculation made through a computer for interference fringes equivalent to said diffraction grating, and exposing a hologram recording material for duplication to interference fringes produced by diffracted 0-th light and 1-st diffracted light

generated from the original hologram plate as a result of light being applied from the side of the original hologram plate to the hologram recording material for duplication via a relay optical system.

27. (Previously Presented) The method for duplicating a diffraction grating as claimed in claim 26, wherein:

the relay optical system is configured so that a surface on the original hologram plate and a surface on the hologram recording material for duplication have a relation of approximately conjugate planes in imaging.

28. (Previously Presented) The method for duplicating a diffraction grating as claimed in claim 26, wherein:

the relay optical system comprises two lens systems,

wherein a front-side focal point of a first lens system thereof closer to the original hologram plate coincides with a surface of the original hologram plate, a rear-side focal point of the first lens system is made coincident with a front-side focal point of a second lens system, and also, a rear-side focal point of the second lens system coincides with a surface of the hologram recording material for duplication.

29. (Previously Presented) The method for duplicating a diffraction grating as claimed in claim 26, wherein:

when a diffraction grating is duplicated as a result of light being applied from the side of the original hologram plate, a wavelength of the duplication applying light is in the vicinity of the light source wavelength of the optical head device, and, convergent light converging at a position equivalent to the light emitting point of the light source of the

optical head device or divergent light emitted from the position equivalent to the light emitting point of the light source is used as the light to be applied.

30. (Previously Presented) The method for duplicating a diffraction grating as claimed in claim 26, wherein:

when a diffraction grating is duplicated as a result of light being applied from the side of the original hologram plate, a wavelength of the duplication applying light is different from the light source wavelength of the optical head device, and, convergent light converging at a position corresponding to the light emitting point of the light source of the optical head device determined according to a difference between the duplicating wavelength and the light source wavelength of the optical head device, or divergent light emitted from the position, corresponding to the light emitting point determined according to the difference between the duplicating wavelength and the light source wavelength of the optical head device is used as the light to be applied.

31. (Previously Presented) The method for duplicating a diffraction grating as claimed in claim 26, wherein:

when a diffraction grating is duplicated as a result of light being applied from the side of the original hologram plate, a wavelength of the duplication applying light is in the vicinity of the light source wavelength of the optical head device, and, convergent light converging at a position equivalent to a point from among a plurality of light receiving points corresponding to a plurality of photo-detecting areas of the photodetector of the optical head device or divergent light emitted from a position equivalent to a point from among the plurality of light receiving points is used as the light to be applied.

32. (Previously Presented) The method for duplicating a diffraction grating as claimed in claim 26, wherein:

when a diffraction grating is duplicated as a result of light being applied from the side of the original hologram plate, a wavelength of the duplication applying light is different from the light source wavelength of the optical head device, and, convergent light converging at a position corresponding to a point from among a plurality of light receiving points corresponding to a plurality of photo-detecting areas of the photodetector of the optical head device determined according to a difference between the duplicating wavelength and the light source wavelength of the optical head device, or divergent light emitted from a position corresponding to a point from among a plurality of light receiving points corresponding to a plurality of photo-detecting areas of the photodetector of the optical head device determined according to a difference between the duplicating wavelength and the light source wavelength of the optical head device is used as the light to be applied.

33. (Previously Presented) The method of duplicating a diffraction grating as claimed in claim 26, wherein:

a spatial filter is provided in the relay optical system for only transmitting 0-th light and a one of the 1-st diffracted light and blocking diffracted light in the other orders applied from the original hologram plate.

34. (Previously Presented) The method of duplicating a diffraction grating as claimed in claim 29, wherein:

a plane including a convergent point or a divergent point of the duplication applying light for the original hologram plate and perpendicular to an optical axis of the relay optical system and a plane including imaging points of light emitted from these points through the

relay optical system and perpendicular to the axis have a relation of conjugate planes in imaging made by the relay optical system.

35. (Previously Presented) The method of duplicating a diffraction grating as claimed in claim 30, wherein:

a plane including a convergent point or a divergent point of the duplication applying light for the original hologram plate and perpendicular to an optical axis of the relay optical system and a plane including imaging points of light emitted from these points through the relay optical system and perpendicular to the axis have a relation of conjugate planes in imaging made by the relay optical system.

36. (Previously Presented) The method of duplicating a diffraction grating as claimed in claim 31, wherein:

a plane including a convergent point or a divergent point of the duplication applying light for the original hologram plate and perpendicular to an optical axis of the relay optical system and a plane including imaging points of light emitted from these points through the relay optical system and perpendicular to the axis have a relation of conjugate planes in imaging made by the relay optical system.

37. (Previously Presented) The method of duplicating a diffraction grating as claimed in claim 32, wherein:

a plane including a convergent point or a divergent point of the duplication applying light for the original hologram plate and perpendicular to an optical axis of the relay optical system and a plane including imaging points of light emitted from these points through the relay optical system and perpendicular to the axis have a relation of conjugate planes in imaging made by the relay optical system.

38. (Previously Presented) The method of duplicating a diffraction grating as claimed in claim 33, wherein:

a plane including a convergent point or a divergent point of the duplication applying light for the original hologram plate and perpendicular to an optical axis of the relay optical system and a plane including imaging points of light emitted from these points through the relay optical system and perpendicular to the axis have a relation of conjugate planes in imaging made by the relay optical system.

39. (Previously Presented) The method of duplicating a diffraction grating as claimed in 29, wherein:

an imaging magnification to the hologram recording material for duplication by the relay optical system from the original hologram plate surface is equal to an imaging magnification to the imaging point of light by the relay optical system from a converging point or a diverging point of the duplication applying light.

40. (Previously Presented) The method of duplicating a diffraction grating as claimed in 30, wherein:

an imaging magnification to the hologram recording material for duplication by the relay optical system from the original hologram plate surface is equal to an imaging magnification to the imaging point of light by the relay optical system from a converging point or a diverging point of the duplication applying light.

41. (Previously Presented) The method of duplicating a diffraction grating as claimed in 31, wherein:

an imaging magnification to the hologram recording material for duplication by the relay optical system from the original hologram plate surface is equal to an imaging magnification to the imaging point of light by the relay optical system from a converging point or a diverging point of the duplication applying light.

42. (Previously Presented) The method of duplicating a diffraction grating as claimed in 32, wherein:

an imaging magnification to the hologram recording material for duplication by the relay optical system from the original hologram plate surface is equal to an imaging magnification to the imaging point of light by the relay optical system from a converging point or a diverging point of the duplication applying light.

43. (Previously Presented) The method of duplicating a diffraction grating as claimed in 33, wherein:

an imaging magnification for the hologram recording material for duplication by the relay optical system with respect to the original hologram plate surface is equal to an imaging magnification to the imaging point of light by the relay optical system from a converging point or a diverging point of the duplication applying light.

44. (Previously Presented) The method of duplicating a diffraction grating as claimed in claim 6, wherein:

the diffraction grating obtained through the duplication comprises a volume phase diffraction grating including liquid crystal material in the hologram recording material for duplication.

45. (Previously Presented) The method of duplicating a diffraction grating as claimed in claim 7, wherein:

the diffraction grating obtained through the duplication comprises a volume phase diffraction grating including liquid crystal material in the hologram recording material for duplication.

46. (Previously Presented) The method of duplicating a diffraction grating as claimed in claim 6, wherein:

the diffraction grating in the original hologram plate comprises a volume phase diffraction grating.

47. (Previously Presented) The method of duplicating a diffraction grating as claimed in claim 7, wherein:

the diffraction grating in the original hologram plate comprises a volume phase diffraction grating.

48. (Previously Presented) The method of duplicating a diffraction grating as claimed in claim 46, wherein:

the diffraction grating in the original hologram plate has a diffraction efficiency equal between for 0-th light and for +1-st diffracted light.

49. (Previously Presented) The method of duplicating a diffraction grating as claimed in claim 47, wherein:

the diffraction grating in the original hologram plate has a diffraction efficiency equal between for 0-th light and for +1-st diffracted light.

50. (Previously Presented) The method of duplicating a diffraction grating as claimed in claim 6, wherein:

the diffraction grating in the original hologram plate comprises a surface relief diffraction grating.

51. (Previously Presented) The method of duplicating a diffraction grating as claimed in claim 7, wherein:

the diffraction grating in the original hologram plate comprises a surface relief diffraction grating.

52. (Previously Presented) The method of duplicating a diffraction grating as claimed in claim 50, wherein:

the diffraction grating in the original hologram plate has a diffraction efficiency equal between for 0-th light and for +1-st diffracted light.

53. (Previously Presented) The method of duplicating a diffraction grating as claimed in claim 51, wherein:

the diffraction grating in the original hologram plate has a diffraction efficiency equal between for 0-th light and for +1-st diffracted light.

54. (Previously Presented) The method of duplicating a diffraction grating as claimed in claim 6, comprising the steps of:

making an original hologram plate having a plurality of the diffraction gratings each having the plurality of divided areas approximately in contact with a hologram recording material for duplication, and exposing the hologram recording material to interference fringes made from 0-th light and 1-st diffracted light generated from a diffraction grating of the original hologram plate as a result of light being applied from the side of the original hologram plate to the single diffraction grating;

moving relatively the original hologram plate, the hologram recording material for duplication and a light for the exposure after the exposure by a predetermined amount; and

repeating said step of exposure and said step of moving alternately a plurality of times.

55. (Previously Presented) The method of duplicating a diffraction grating as claimed in claim 7, comprising the steps of:

making an original hologram plate having a plurality of the diffraction gratings each having the plurality of divided areas approximately in contact with a hologram recording material for duplication, and exposing the hologram recording material to interference fringes made from 0-th light and 1-st diffracted light generated from a diffraction grating of the original hologram plate as a result of light being applied from the side of the original hologram plate to the single diffraction grating;

moving relatively the original hologram plate, the hologram recording material for duplication and a light for the exposure after the exposure by a predetermined amount; and

repeating said step of exposure and said step of moving alternately a plurality of times.

56. (Previously Presented) The method of duplicating a diffraction grating as claimed in claim 6, comprising the steps of:

making an original hologram plate having a plurality of the diffraction gratings each having the plurality of divided areas approximately in contact with a hologram recording material for duplication, and exposing the hologram recording material to interference fringes made from 0-th light and 1-st diffracted light generated from respective diffraction gratings of the original hologram plate as a result of light being applied from the side of the original hologram plate to the plurality diffraction gratings simultaneously from among the plurality of diffraction gratings included in the original hologram plate;

moving relatively the original hologram plate, the hologram recording material for duplication and a light for the exposure after the exposure by a predetermined amount; and

repeating said step of exposure and said step of moving alternately a plurality of times.

57. (Previously Presented) The method of duplicating a diffraction grating as claimed in claim 7, comprising the steps of:

making an original hologram plate having a plurality of the diffraction gratings each having the plurality of divided areas approximately in contact with a hologram recording material for duplication, and exposing the hologram recording material to interference fringes made from 0-th light and 1-st diffracted light generated from respective diffraction gratings of the original hologram plate as a result of light being applied from the side of the original hologram plate to the plurality diffraction gratings simultaneously from among the plurality of diffraction gratings included in the original hologram plate;

moving relatively the original hologram plate, the hologram recording material for duplication and a light for the exposure after the exposure by a predetermined amount; and

repeating said step of exposure and said step of moving alternately a plurality of times.

58. (Currently amended) The method of duplicating a diffraction grating as claimed in claim 6, comprising the steps of:

making an original hologram plate having a plurality of the diffraction gratings each having the plurality of divided areas approximately in contact with a hologram recording material for duplication, and exposing the hologram recording material to interference fringes made from 0-th light and 1-st diffracted light generated from the respective diffraction gratings of the original hologram plate as a result of light being applied from the side of the original hologram plate to the plurality diffraction gratings simultaneously so as to expose the hologram recording material for duplication for the plurality of diffraction gratings included in the original hologram plate at the same time~~in a lump~~.

59. (Currently amended) The method of duplicating a diffraction grating as claimed in claim 7, comprising the steps of:

making an original hologram plate having a plurality of the diffraction gratings each having the plurality of divided areas approximately in contact with a hologram recording material for duplication, and exposing the hologram recording material to interference fringes made from 0-th light and 1-st diffracted light generated from the respective diffraction gratings of the original hologram plate as a result of light being applied from the side of the original hologram plate to the plurality diffraction gratings simultaneously so as to expose the hologram recording material for duplication for the plurality of diffraction gratings included in the original hologram plate at the same time~~in a lump~~.

60. (Previously Presented) The method of duplicating a diffraction grating as claimed in claim 26, comprising the steps of:

disposing an original hologram plate having a plurality of the diffraction gratings each having the plurality of divided areas recorded therein and a hologram recording material for duplication with the relay optical system inserted therebetween, and exposing

the hologram recording material to interference fringes made from 0-th light and 1-st diffracted light generated from a diffraction grating of the original hologram plate as a result of light being applied from the side of the original hologram plate to the single diffraction grating thereof; and

moving relatively the original hologram plate, the hologram recording material for duplication and a light for the exposure after the exposure by a predetermined amount; and

repeating said step of exposure and said step of moving alternately a plurality of times.

61. (Previously Presented) The method of duplicating a diffraction grating as claimed in claim 26, comprising the steps of:

disposing an original hologram plate having a plurality of the diffraction gratings each having the plurality of divided areas recorded therein and a hologram recording material for duplication with the relay optical system inserted therebetween, and exposing the hologram recording material to interference fringes made from 0-th light and 1-st diffracted light generated from respective diffraction gratings of the original hologram plate as a result of light being applied from the side of the original hologram plate to the plurality of diffraction gratings from among the plurality of diffraction gratings of the original hologram plate; and

moving relatively the original hologram plate, the hologram recording material for duplication and a light for the exposure after the exposure by a predetermined amount; and

repeating said step of exposure and said step of moving alternately a plurality of times.

62. (Previously Presented) The method of duplicating a diffraction grating as claimed in claim 26, comprising the steps of:

disposing an original hologram plate having a plurality of the diffraction gratings each having the plurality of divided areas recorded therein and a hologram recording material for duplication with the relay optical system inserted therebetween, and exposing the hologram recording material to interference fringes made from 0-th light and 1-st diffracted light generated from the respective diffraction gratings of the original hologram plate as a result of light being applied from the side of the original hologram plate to the plurality of diffraction gratings thereof so as to expose the hologram recording material for duplication for the plurality of diffraction gratings included in the original hologram plate in a lump.

63 - 159. (Canceled)